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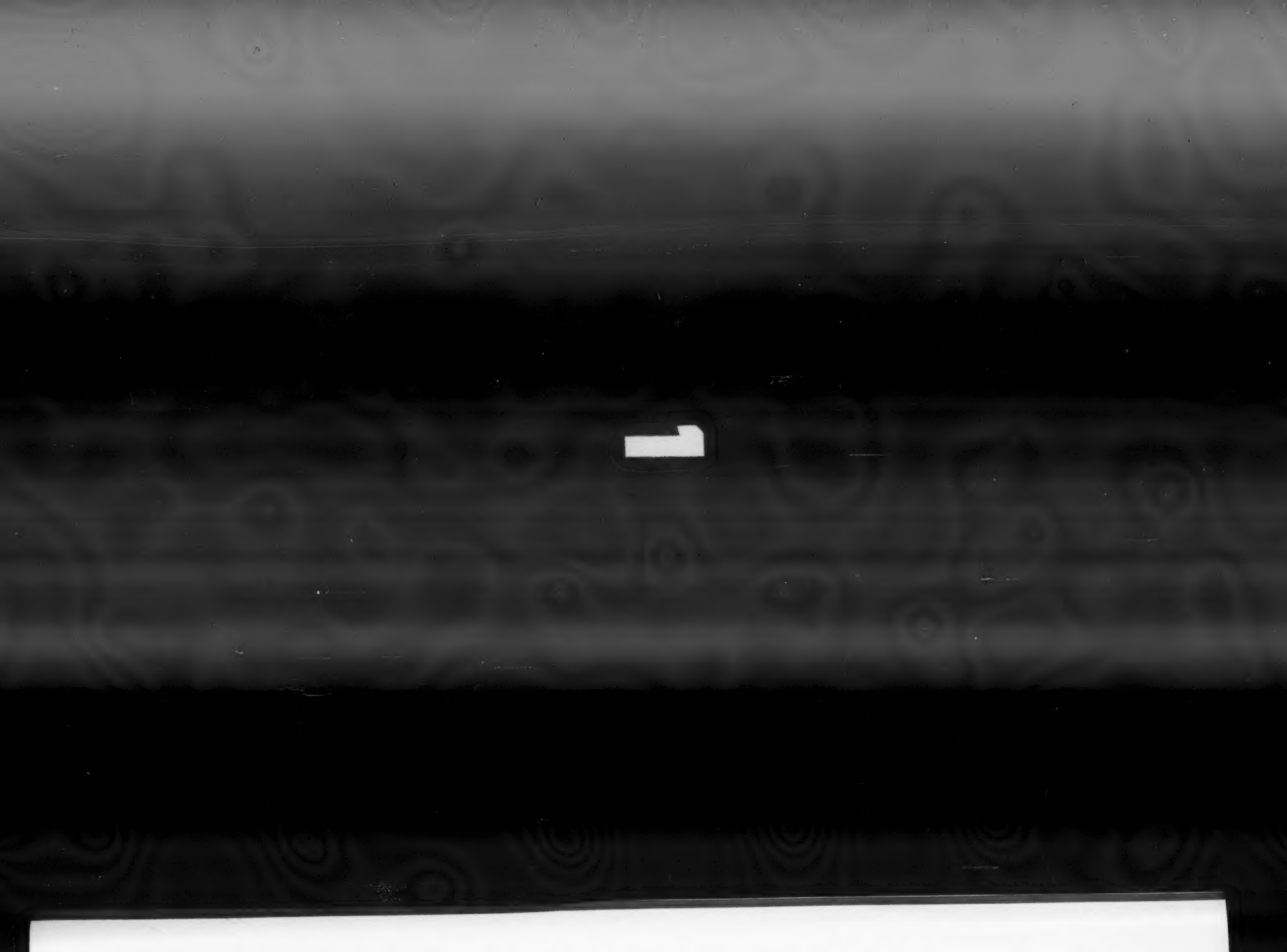

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Technical Highlights of the Month

AN EASY WAY TO ALLOW FOR MACHINE INTERFERENCE

Everybody concerned with mill production knows that machine-downtime interference (usually called simply machine interference) takes its toll of production.

When a drawing tender, for example, is doffing one drawing frame and another one knocks off, the second frame must stand until the tender finishes doffing the first frame, starts it up, and walks to the second frame.

Wherever an operator runs more than one machine and random stops occur on those machines, interference caused by two or more machines stopping at once is unavoidable.

Simple timestudy of the work done by an operator to establish a standard workload does not reflect (and is not directly influenced by) this machine interference. Many mills, however, study machine outage for frequency, cause, and duration of stops and relate the results to operator activity. Such a study reveals and evaluates machine interference.

Fairly complicated calculations will yield a theoretical value for machine interference.

But there is an easier way to compute the loss of production. Tables worked out in England by Ashcroft and known as the Ashcroft Tables, quickly show the loss of production through machine interference.

(See this article for table of interference calculations, and for details of use.) (T. F. O'Connor, *Textile World 102*, 101, December, 1952.)

MILL EVALUATIONS OF THE STATE COLLEGE NEP CONTROL PROGRAM

On the whole, we have found the N. C. State nep reduction program good. On a pilot plant basis we have found the recommended practices have reduced neps at the card web up to as much as 25%.

On a mill production basis, we have found the following parts of the nep reduction program effective.

1. Cotton selection. We agree that selection of cotton according to fineness, maturity, variety, and ginning preparation does permit a closer control of neps in the card web. Blending according to fiber characteristics also stabilizes nep counts.

2. Staple length is also a factor in controlling neps; however, staple length cannot be changed at will but is more or less determined by the yarn counts being spun (assuming no reduction in yarn quality can be permitted). No doubt staple length is a secondary influence, there usually being such a high correlation between staple length and fineness.

3. Burrs and otherwise unsmooth working surfaces also are found to adversely affect neps in the webs.

4. Bent beater pins, damaged licker-in, cylinder, doffer, and flat wires also are found to adversely affect nep counts.

5. Close settings of the flats, the mote knives, the feed plate, and the doffer to the cylinder are found helpful in keeping nep counts down.

6. Excessive beating of the stock, whether at the gin, in the opening room, or at the pickers will adversely affect nep counts.

7. Brisk air currents are found good for reducing nep counts. The stock should not linger in the beater boxes but should pass through rapidly and unimpeded.

Some of the recommended practices have not been found to be too desirable.

1. Use of a 30 setting on the mote knife has in all cases tried materially raised card fly waste. Since we have laid considerable stress in our mills on waste reduction, we would be reluctant to advocate any planned increase in waste.

2. The 800 r.p.m. licker-in in the mill has not been too successful. We believe our lack of success with this feature may be attributable to extraneous factors not considered by the N. C. State researchers. We have not exhaustively tried to make the high licker-in speeds work; therefore, we do not want to in any way discredit this or any other feature of the N. C. State nep reduction recommendations.

3. When we have used as many as three Superior cleaners in tandem, we have had marked curliness in the stock with resultant high nep counts.

4. We have never been able to reduce card flat speeds without at the same time increasing nep counts.

5. We have never been able to increase the rate of carding in pounds per hour without also increasing nep counts.

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In actual mill operations, we sometimes find conditions which adversely affect nep counts at the card web but which were not taken into consideration by the N. C. State recommendations. Here again, we do not mean to be in any way critical because such conditions are not apt to be found in a pilot plant operation such as was used by N. C. State on this project:

1. Alignment and levelness of the card are considered important in a nep reduction program. In mill operations, these can be too long overlooked.

2. Floor vibration is an important factor in many mills, especially if the cards are located on the upper floors. Because of this condition, we generally consider it unwise to go to a .007 flat setting. In most cases, we can not go below a .009 setting at this point.

3. Cylinder, doffer, licker-in, and feed roll bearings must be in good shape for close settings and good nep control.

4. Cylinder and doffer surfaces must be kept true if close settings are to be used and good control over neps is to be had.

5. The cleanliness of the screens is also considered an important point. Too often these can be neglected.

6. Too frequently oily and worn out card grinding fillet is used.

7. The card grinding roll should be kept in good condition. A routine system of inspection is recommended.

8. Too often, oil is slung into the ends of the flats and into the cylinder clothing.

How to Get Results: The question arises as to how to effect these things, knowing they are good. This, of course, involves a program, training, and systematic inspection. Most of us no doubt use a routine nep count at the cards with re-checks until high cards are brought into line. Some give counting templates to their grinders and use some means of stimulating competition between their grinders.

We do not now have adequate means of checking into the production of neps beyond the card. There probably will be an instrument on the market in the not too distant future. (Harry Defore. *Textile Industries 116,* 133-134, December, 1952.)

ANTI-CORROSIVE PROCESS FOR TEXTILE MACHINERY

An important method of preventing corrosion of a wide range of textile machinery is electro-chemical deposition of metals, that is a protective coating of nickel or chromium, both of which process high resistance to corrosion and wear.

The pioneers of heavy deposition of industrial purposes are Fescol Ltd., North Road, London, N.7., and the principle is based on complete adhesion or bondage of the applied material, nickel or chromium, as stated, to the basic metal such as steel, copper or cast iron. This bondage is effected by atomic attraction between the two metals so that they are homogeneous and cannot fracture. Another important factor is that the process is carried out cold, so that the structure of the metal is not affected and there can be no distortion.

The Fescol process provides a nickel or chromium surface on calender bowls, crimping rollers, tape condenser rollers, measuring rolls, printing rolls, hank drying tubes and other equipment.

The process was originally introduced as a salvage operation, restoring or building up worn parts and components. It was soon found by experience, however, that the treatment was equally valuable for the initial protection of new plant before being put into service. (*Skinner's Silk & Rayon Record 26,* 1374, November, 1952.)

OPPORTUNITIES FOR YOUNG MEN IN TEXTILES EXCEED OTHER INDUSTRIES, SAYS MILLIKEN

The textile industry would attract many promising young men if the opportunities it affords were properly publicized is the sentiment in many sections of the trade. All too often, the long range prospects are overlooked by the "glamor" of the big starting salaries of other industries, states Roger Milliken, president of Deering, Milliken & Co., Inc.

The National Council of Textile Deans at a recent meeting went on record as urging that the textile industry become more conscious of the need for "a better press."

Mr. Milliken in answer to a letter from Harry Riemer, editor of *Daily News Record,* on this subject writes:

Dear Harry:

I have just received your letter, and I think that it presents a very interesting challenge to our industry. We have given this matter a great deal of thought ourselves in our own organization, because we in the textile industry cannot pay college graduates starting wages similar to those offered by the airplane companies, who are working on defense contracts, and by the chemical companies, who have enormous expansion programs and seem to be willing to pay anything to attract new personnel.

However, a study of our own organization has

shown that after a man has been with us for two to five years, provided he has shown ability, he is doing considerably better in salary and responsibility, and therefore opportunity, than those who have gone with the larger companies. It seems that they have very high starting salaries, but that a man's rate of progress beyond that is very slow. I think that our industry would be prepared to pay higher initial starting rates if it weren't for the fact that it would upset the entire wage structure in the industry and do more than anything else to turn the non-college graduate against the new men that we are trying to bring into the industry. All of this, I think, is borne out by the fact that in the recent study that Fortune made on salaries of top personnel in different industries, the textile industry was practically leader of the list.

I think there is a very good reason for this in that the textile industry is probably the most competitive of all industries, because of the vast number of individually owned units. Also, there is a most enormous opportunity for individual initiative in styling and fabric construction with all the resultant need for good judgment on timing, etc., which places a real premium upon ability which need obviously doesn't exist in the utility, railroad or other types of industries where the competition isn't as keen and the opportunities for distinctive creative styling are not present.

I think the facts that would be uncovered by a study or research project as to the opportunities for young men in our industry would be so startling that they would do a great deal of good for the public relations of our country, and also would do young men a great service in showing them that here is an industry where the ambitious able college graduate can reach position of real importance very rapidly. As I write this, I remember that the Fortune article also showed that the average age of the top executives in the textile industry was younger than that of other industries, which again fits in with what I have been saying in this letter.

Roger Milliken
Deering, Milliken & Co., Inc.

Mr. Riemer's letter to Mr. Milliken is as follows:

My dear Roger:

Meeting with the National Council of Textile School Deans in Boston, the consensus of the meeting was that our industries would be well served if there were a possibility of attracting national interest in textiles and the opportunities offered by textiles to young men who are thinking in terms of a career.

Our textile schools should attract promising young men who are not directly or indirectly connected with textiles, as well as those related to it in some way.

The deans feel that this could be accomplished best if articles stressing the opportunities in textiles (without being confined to any one fiber) could be written and published in some of the national consumer publications.

The way the deans express it is—they would like to see textiles glamorized from the point of view of offering career opportunities.

I was requested to write this letter to you in behalf of the deans—in your official capacity as treasurer of the Textile Committee on Public Relations.

It would be an additional service of value if, in the committee's public relation program, this could be included.

Harry Riemer

(*Daily News Record 237*, 2-6, December 5, 1952.)

ARE YOUR WEAVE-ROOM METHODS AS MODERN AS THESE?

All the mills that are running looms equipped with Diehl drives like them. They say this:

Mill A—"We have 130 x-2 looms, 50 in. wide, that we're running 164 p.p.m. on types 128 and 140 sheeting. We check the transmitter gear for wear periodically. The Diehl drives are superior to conventional drives, and our loom speed is constant."

Mill B—"We turn the gears off the pick each 6 months. The gears are greased each 16 hours. We have 360 looms that run 192 p.p.m. equipped with Diehl drives, and we spend less time in maintaining them than in maintaining conventional clutches."

Mill C—"We have 164 looms on the Diehl drive that we're running at 164 p.p.m. We grease the gears each 8 hours and have not turned any transmitter gears in the 14 months that we have had the looms."

Four mills work with the State Vocational Education Program to train their loomfixers. Weavers and other qualified persons, such as smash hands and warp men, attend the classes on their own time. The instructor is usually a weave-room second hand and is paid by the State.

The other 10 mills who reported on loomfixer training train their own loomfixers. The training methods of all the mills is about the same. Trainees are ordinarily placed with another loomfixer or in an overhauling group. One mill has built a classroom and placed six looms in it. The room is used only for training fixers. An in-

structor teaches the trainees to take down and reassemble a loom. The learners are taught all the standard loom settings on all the loom motions. They go from the training room to the weave room, where they stay with an experienced loomfixer until they are given a section.

The selection of men to be trained is more important to most of the mills than the methods of training.

These qualifications are desired:

1. The learner should be between 20 and 30 yr. of age.
2. He must be mechanically-minded.
3. He must be a good weaver.
4. He must be congenial and cooperative in spirit.
5. He must have a good work-attendance record.
6. He must be willing to work on any shift.

Only about 20% of those who start the course make good loomfixers.

Only five mills reported that they had tried endless checkstraps.

Mill A is still in the experimental stage. It's using leather straps and also the multiple rubber straps. The straps are proving satisfactory, but they're harder to keep adjusted than conventional-type straps. The loom-fixers must also be trained to use them.

Mill B is running 320 loms on endless checkstraps. The loms are X-2 models that run at 175 p.p.m. and E-models that run at 165 p.p.m.

Some of the looms are equipped with multiple rubber straps and others use single ply leather straps. This mill thinks that the straps are checking the looms and that the checkstrap cost is reduced.

Mill C definitely does not like endless checkstraps. It ran two looms on endless straps for 18 months and used all types of checkstraps. The straps required more attention from the loomfixer than convention-type straps and ran very little longer. The looms used more bunters, binder leathers, and pickers.

Mill D gives six reasons why it doesn't like endless checkstraps:

1. The checkstraps stretched in a few days and then would not check the shuttle.
2. The binders and shuttles wore quickly because the shuttles were not checked.
3. Pickers wore rapidly.
4. The looms did not run good generally because they slammed off and made break-outs. The loomfixers were always busy trying to check the shuttle.
5. Too much time was spent in replacing these straps in comparison with slotted checkstraps.
6. On XP looms, the straps had to be removed because they threw the shuttles out of the warps, slammed off, and also made break-outs. (*Textile World 102*, 117-118, December, 1952.)

YARN TESTER SIMPLIFIES FINDING COEFFICIENT OF VARATION

The Audodinamograph, an instrument for the simultaneous testing of strength and elongation of cotton, rayon, synthetic, and woolen yarns, has been developed in Italy and is now available from Stellite American Corp., 60 E. 42nd St., New York 7, New York. The new tester has places for seven bobbins to be handled at a time, 10 tests per bobbin. The unit automatically records strength in grams on a bar-type chart and the average of each bobbin after every 10 samplings.

The Audodinamograph is manufactured by Fabbriche Elettrotecniche Riunite in Milan, Italy. It is constructed with a 20-in. distance between the two clamps, according to the ISO standard yarn-testing setup.

The tester makes it easy to obtain over-all averages of both strength and elongation of yarns for comparative purposes and coefficients of variation. (*Textile World 102*, 154, December, 1952.)

LATEST REFINEMENTS TO THE FISCHER LET-OFF MOTION

George Fischer Ltd., the Swiss engineers, recently introduced a new type of automatic let-off which is claimed to function satisfactorily and gives an absolutely even let-off and warp tension throughout the length of the warp, entirely without attention once it has been set to the correct tension at the commencement of the beam, by means of a compression spring. This setting is extremely simple to carry out.

The let-off is controlled by a special asbestos-lined completely circular brake shoe and an important advantage claimed for the invention is that it can be applied without difficulty to existing non-automatic and automatic looms and to the mill's own beams through beam drivers which are supplied to fit all standard warp beams. By the provision of two ball bearings in the brake housing all lubrication is dispensed with and the leakage of lubricants on to the braking surface is obviated.

In operation the device is controlled by a feeler bar which is in constant contact with the warp on the beam. As the diameter of the beam decreases so the feeler automatically releases the brake and lets out just exactly the right amount of warp.

According to the space available on the loom, the feeler shaft is either mounted on suitable bearings at the back of the frame or taken through an existing or specially lrilled hole in the loom frame. The setting is maintained throughout the whole warp and gives a constant let-off without further attention. (*Skinner's Silk & Rayon Record 26,* 1356, November, 1952.)

CONTROL ROLLS FOR CARDS ELIMINATE DEFECTS IN SLIVER DUE TO PLUCKING

Practically all of the defects in card sliver due to plucking can be eliminated by application of recently developed control rolls to cards. The action of the rolls smooths up the sliver by breaking up the lumps detached by the licker-in and thus effects a very noticeable improvement in the quality of the yarn.

A wire-wound roll is placed directly below the nose of the feed plate and revolves in the same direction as would a bottom feed roll. The teeth in this wire-wound roll point in the opposite direction to its rotation. The feed plate is then adjusted to .035" to .050" from the licker-in. The wire-wound roll is set .007" to .010" from the licker-in and is rotated at a surface speed 10 to 15% faster than the surface speed of the feed roll.

With this arrangement, the licker-in takes the fiber from the lap on the upper surface as it is fed througth by the feed roll. This loosens the fiber in the lap and throws it in a soft condition on the wires of the control roll. The action of the licker-in over the surface of this roll is to completely separate the fibers from each other while they are in a loose condition.

Because of the air spaces between the teeth of the wire-wound roll and of the licker-in, there is no tendency to damage the fibers while they are being separated. This results in a more clearly uniform feed from the feed plate and a much better distribution of the fibers as they are thrown on the cylinder by the licker-in. Because of the complete fiber separation there is less tendency for the flats and the cylinder to load up during operations.

In running cotton or like fibers it has been found desirable to use one control roll and one mote knife. Where synthetic fibers are being run it is desirable to use two of these control rolls, one immediatedw following the other. The first roll should be set from .012 to .015" and the second roll from .010" to .012" from the licker-in. The fibers up to 4½" can be run successfully where these rolls are applied to the existing card with three sets of workers and strippers.

The application of these rolls to existing cards of Saco-Pettee or Saco-Lowell manufacture is very simple. It is only necessary to drill one hole in the card side for the drive and two tapped holes in the shelf to apply the driving bracket. They are so arranged as to fit equally on right or left hand cards.

It will be possible to apply these rolls to other makes of cards as the necessary information with regard to the present feed plate and mote knife arrangement becomes available.

These control rolls can be applied to both revolving flat cards and to roller top cards.

Saco-Lowell Shops, 60 Batterymarch Street, Boston, Mass. (*Textile Industries 116,* 81, December, 1952.)

A SWISS POLYMER FIBER

Further details of the new Polyacrynitril fiber of the Phrix combine are: Present production of Redon at the Neumunster plant amounts to a few hundred kg. per day only which, for the time being, are used for experiments and tests in various branches of the textile industry. Plans are, however, advanced for a plant for mass production of Redon. At present Redon is only produced as a staple, and its price will be slightly higher than that of normal wool qualities owing to the small output. It is hoped that Redon will be marketed cheaper, once mass-production has started.

Although it is admitted that in many respects Redon has the same properties as Orlon, it is claimed that Redon is superior to Orlon, e.g. in dyeing. Redon can be spun-dyed and can be dyed in the normal way while Orlon, it is pointed out, can only be dyed under pressure. Specific weight is given with 1-14, breaking strength with 25-30 Rkm., maximum for ironing 120 Celsius. It is estimated that owing to its low density Redon could replace wool in the proportion of 1: 1-5.

Phrix works have developed a new fully synthetic fiber said to have properties similar to wool. The new fiber is named Phrilon II and is at present under tests for wear, washing, etc. It is also reported that Badische Anilan- und Sodafabriken (BASF). Ludwigshafen, have developed a new synthetic fiber of the Orlon type. (*Skinner's Silk & Rayon Record 26,* 1356, November, 1952.)

HOW TO MAKE YOUR LOOM LEATHERS LAST LONGER

Loom-leather annual costs are approximately one-half the total loom-maintenance cost in the average mill.

Much of the money spent on leathers is wasted, since leathers are ordinarily replaced, not because of normal wear, but because they are

selected for a job that they were not made to do or because they are abused by improper loom settings. Harness strapping, for instance, will last only two or three days on the Dwight spring-top harness motion if the pin in the compensating sheave is set out of time.

To make checkstraps last longer:

1. Reduce the power on the picker sticks, and loosen the binders so that the shuttle will float into the shuttle box gently.

2. Reduce the tension on the heel spring. Too much heel-spring tension pulls the picker stick through the checkstrap and makes it necessary to tighten the binder to check the shuttle.

With these settings, the pressure of the finger against the checkstrap can be reduced and the checkstrap will wear less at the side and also at the end of the power stroke because it will have little friction to overcome.

Boosters for checkstraps will often double the life of the checkstraps.

Binders that are too tight are the main source of binder wear. If looms pick harshly, the checkstrap will not check the shuttle and, consequently, the binders have to be tightened. Then both the binder leather and the box-plate leathers wear quickly.

The harsh picking action ordinarily results from a worn picking motion. The only thing to do is to overhaul the picking motion if binder-leather costs are to be cut. The savings in leather will more than offset the cost of overhauling the picking motion, and loom performance will also be improved.

If you're running roll-top harness motions, your strapping cost isn't likely to be high; but faulty harness adjustments can wear out the straps fast. The roll should be centered between the two straps so that the harness at the bottom at the bottom shed of the warp will not pull against the screw that holds the strap to the roll.

Dwight top harness motions must be checked often to see that the compensating sheaves are properly divided. (Richard B. Pressley. *Textile World 102*, 104-105, December, 1952.)

BRITISH PLANT DEVELOPMENT RESEARCH CONFERENCE

Factors in plant development provided an absorbing subject for another successful one day conference, held by the Textile Institute in Manchester, just as we were going to press with October issue.

Space will not permit us to reproduce the five excellent papers in full, but we thoroughly recommend their fullest perusal, when they appear in the *Textile Institute Journal*. Mr. H. G. Greg (R. Greg and Co. Ltd.), who dealt with the subject from a whole string of minor points in which the makers of spinning machinery could give better service to the industry, and perhaps his most important point was the need for machinery which could give good results in a short time from green labor. On this theme, he asked why there was not a ring frame with an engraved panel to show what wheels to put where, to achieve a given twist or a required draft. Safety, accessibility, lubrication, standardization of parts were all dealt with by Mr. Greg.

Opening the discussion Mr. Harold Ashton (Courtaulds Ltd.) asked the pertinent question as to whether we could afford to buy costly equipment and let it stand idle for two-thirds of the time. On the issue of making spinning machinery more versatile Mr. Frank Heywood (T. M. M. Research), said that this problem was being taken up at Helmshore, but he promised no short term answer.

Mr. W. A. Hunter (T. M. M. Research) referred to the slowness of the Lancashire trade in taking up short-cut processes, when they were offered to them in the 30's. Mr. Allan Draper (Richard Haworth and Co. Ltd.), wondered whether machines needed to be as big and heavy as they were. He understood that there was a prototype ring frame, two-thirds the width of existing frames and he asked for a frame to take the Shirley doffer and maintain the same production level. He did not agree that new machines should merely maintain quality. They should improve upon it.

Speaking from the weaving industrialist's point of view, Mr. J. P. Crump (E. Clegg and Son Ltd.), said that the automatic loom as known in Lancashire was a step in the right direction, but it was still basically the same as that made 20 years ago. He believed there was a great deal to be done in the way of quieter, faster, cleaner looms—looms, which were possibly more mechanically sound. Looms of higher mechanical standard had greater speed and efficiency equal to that of slower looms. Initial cost was far higher, but in production costs of a period of years, he believed they would hold their own and the time spent on repairs and maintenance would be further reduced. Some of the most interesting points he raised concerned mechanical handling in weaving shed and warehouse, on which development we believe his mill to have largely led the whole trade.

Opening the discussion, Mr. Allan Draper (Richard Haworth and Co. Ltd.), appealed to the

trade to make better use of the Shirley Institute. He cited the Shirley accelerated dryer and the automatic size-regulator, as examples of Shirley technique, which could keep Lancashire ahead of her competitors. Mr. A. F. W. Coulson (R. Greg and Co. Ltd.), suggested that the stage might now have been reached when we knew what we were looking for in the requirements of new machines and could get them. He instanced the need for an automatic stop motion for speed frame, which would act when an end was down.

The suggestion that looms were made on blacksmith lines, rather than precision engineering, brought an immediate response from Mr. M. Ashton (British Northrop Loom Co. Ltd.), who compared the pitifully low percentage of automatic looms in Lancashire with the high American figure. As for the hammer and chisel methods—they were definitely out and precision methods of loom manufacture had been the practice for many years. He also defended the loom maker against Mr. Crump's inference that automatic looms had not altered in the past 20 years. There had been major development during this period. Today this firm made 40 different models—in fact every type of loom, except the pick and pick, was available as an automatic.

MR. Kenneth A. Stott (J. Chadwick and Co. Ltd.), speaking from the finishers' viewpoint compared British and American techniques and said that the J-Box method of bleaching, now widely used in America, depended for its efficiency on very long runs, but he was not satisfied that the standard of bleaching in the U. S. A. was as high as that over here. The Standfast molten metal dyeing machine met our requirements for moderate runs and for some cotton and rayon fabrics it offered a substantially perfect solution to the problem of continuous dyeing, and it might well prove an inspiration towards further progress. In reviewing the question of instrumentation, he suggested that common sense was needed and that it was easy to over-instrument and defeat the objects of these methods of control.

Dr. A. W. Hill (British Cotton Industry Re search Association) speaking from the research worker's viewpoint, stressing that time was needed to transfer the ideas of the inventor to practical use, referred to the fact that the J-Box had been foreshadowed by a design patented by Sir William Mather in 1881, and the use of molten metals for heat transfer had been suggested as long ago as 1860 by Frederick Walton.

The problems of the machinery maker, Dr. Hill continued, were textile as well as engineering problems. New spinning machinery was better engineered, but it was still fundamentally the same machinery doing little or no more than well-maintained old machinery. Improved designs could bring in their train unexpected problems. The trend towards large diameter bowls for mangle finishing could be a retrogade step, as it was not yet known how it affected the pressure distribution on fabrics.

Dr. Hill, in repyling to Mr. Coulson's remarks about knowing what they wanted and getting it, said that even though the fundamental knowledge was available, it had still taken seven years to produce the Shirley Autodoffer.

Professor J. B. Speakman (Leeds University), made a plea for greater cooperation between research workers and mill men and said that Lancashire might adopt Yorkshire's decision to pool funds for research. The gap between research and industry led to the fact that 20 years ago it had been known that water-white mineral oils were noncarcinogenic, and instead of the oil refiners, spinners and trade unions getting together, people had gone on dying of cancer, who need not have done so. (*Skinner's Silk & Rayon Record 26*, 1341-1342, November, 1952.)

TUCKING CLOTH BALE COVER

A quality control program has been in effect for several years at Eastman Cotton Mills, Eastman, Ga. This mill makes high quality sheetings and drills for which uniform and clean yarns are a must. One soiled bale of grey cloth is costly, in terms of quality as well as the labor required to repack a soiled bale.

D. C. Floyd, cloth room overseer, noted that bales of cloth were dumped from the bale press onto the floor where they got soiled before the burlap cover was sewed together. These bales had to be repacked; furthermore Mr. Floyd noted that the cloth bale press remained idle for long periods of time to allow the operative to sew the cloth bale covers.

The burlap cloth bale cover was sewed on three sides of each end of the bale of cloth. In sewing the bale all around it was necessary to turn the bale over, and sometimes if the burlap was not wrapped snugly all around the cloth, grease and dirt got onto the cloth. Then the whole bale had to be repacked.

The cloth room overseer at Eastman devised a method of sewing the bale covers so that about two-thirds of one man's time is saved by sewing only one side of the burlap cloth cover on each end of the bale. Also, the cloth is now less likely to be soiled at the bale press.

The burlap bale cover is now tucked under the bale band while the cloth is under pressure on the

bale press. When the pressure is released, the cloth bale expands and applies tension on the bands which hold the tucked portion of the burlap in place. (*Textile Industries 116,* 103-104, December, 1952.)

NEW TWISTER HAS ADJUSTABLE GAUGE

A new twister with adjustable gauge has been developed by J. A. Bradshaw, 20 Edgewood Dr., Greenville, S. C. The outstanding feature of the new frame, called Flexal, is this almost complete adjustability of gauge—and that includes ring rail, spindle rail, roller beam, thread board, and creel.

The frame's versatility is made possible by the use of aluminum or aluminum-alloy extrusions made with T-slots, in which the working parts of the twister are mounted. The extrusions eliminate the need for expensive machined parts and make possible the advantage of adjustable gauge without the disadvantage of exorbitant price.

Flexal was originally designed for regauging and modernizing of older twisters, but it is also available as a new frame. The use of aluminum or similar alloys means less weight, less counterweight, and perhaps more accurate response in the traverse motion of the rail.

Gauge is adjustable from a minimum of 3 in. to any maximum. Traverse is adjustable from 6 in. to 10 in.

The use of an offset ringholder together with a ring rail positioned inboard of the spindles permit full-length and full-width separators to be employed.

Instead of from the conventional samsons, frame support is derived from two separate horizontal brackets clamped to two vertical steel tubes. The feet may be individually adjusted to permit leveling on an uneven floor. Other construction details are said to allow at least a 4-in. saving in frame width when a frame is converted. (*Textile World 102,* 151-152 December, 1952.)

HERE'S WHAT MILLS IN ALABAMA DO IN COMMUNITY RELATIONS

The Alabama survey of community activities was made by the Alabama Cotton Manufacturers Association, whose headquarters are in Montgomery. Dwight M. Wilhelm, executive vice-president, sent to his member mills questionnaires which, when filled in by management, outlined the specific community activities engaged in last year by the individual mills, or by mill organizations which had one or more textile plants.

The association received complete replies from 19 mill companies (organizations) operating a total of 47 individual mills. These embraced an aggregate of 1,223,610 spindles and 27,249 employees.

The most significant aspect of the survey lies in its disclosure of the diversity of community activities undertaken by the responding mills. These ranged, for example, from the organization of choral groups and self-help programs to the building of schools and hospitals to serve their communities.

Although it was impossible to obtain the total dollar value of the contributions, mill expenditures on community progress ran into millions of dollars last year.

For example, one mill company and its officials donated approximately $350,000 toward building a new $525,000 hospital, contributed an additional sum to purchase more land for the construction later of additions and a nurse's home, and made up losses of $15,000 incurred by the hospital in taking care of patients unable to pay their own way.

Another company contributed to the community in which it is located a school building and public utilities valued at $750,000.

A third company donated to the county a handsome six-room school building together with funds necessary for provision of playgrounds and the like.

A fourth company made a gift to the community of electric and water utility systems, two school buildings, and a church edifice.

Still another has established a charitable and educational foundation which made large gifts to local schols and charitable organizations. The modern senior high school in the community in which it is located was made possible by a gift of about $400,000. A campaign for a colored high school was sparked by the foundation's offer of $50,000 if matched by local funds.

The accompanying table sums up the report of mill activities:

COMMUNITY AND PUBLIC RELATIONS BY TEXTILE MILLS OF ALABAMA
(On Basis of Spindles and Employees)

Activity	*Spindles Represented*	*Employees Represented*
Mill Visitation	1,132,362	25,006
Employee Publication	570,904	13,320
Red Cross Blood Donor	884,292	19,199
Boy Scout Campaigns	964,798	20,803
Girl Scout Campaigns	797,252	15,550
Local Recreation	1,068,214	23,003
Self-Help Programs	773,686	16,190
Exhibits at Fairs	850,170	18,595
25—50—Year Clubs	337,440	4,573
Local Church Support	1,080,302	24,273
Special Hospital Contributions	858,130	18,765

Entertain Students and Faculty Members	1,134,154	24,614
Area Ministers as Guests	685,388	11,815
Cooperation New Church	875,388	22,883
Rebuilding or Repairing Church	679,872	17,783
Christmas Parties for Children of Employees	1,071,266	23,378
Supplied Speakers	1,064,993	22,765
Drives to Get Out Vote (other)	1,025,690	22,385
Organized Choral Groups	308,502	4,990
T.V. Sets in Community Centers	395,002	6,690
Promote Community Activities by Newspaper Advertising	977,422	21,095

(John Mebane *Textile Industries 116*, 87-89, December, 1952.)

OPELIKA MILLS MADE 22-in. LOOMS FROM USED 40-in. E-MODEL DRAPERS

This is the story of how our mill converted used 40-inch E-Model Draper looms to 22-inch looms which make crash toweling. The total cost per loom, including purchase price, cutting it down, and putting it into operation was five hundred dollars.

Former speed of the 40-inch looms was 162 picks per minute; converted to 22-inch looms they run at 182 ppm.

Our procedure for converting the looms follows:

In dismantling the loom, the warp, harness, and every part that holds the loom sides together is removed. Then the width of the loom is reduced 18 inches.

The following parts are removed: front girt, back girt, breast beam, crank shaft arch connection, cam shaft, stop motion, worm crank shaft, beam locks, battery, lay, right hand sword, left hand sword, crank arm, hand rail, friction, cloth roll stands, motor, motor base, protector rods, shipper handle, parallels, and parallel shoes.

The following parts do not have to be removed: The complete takeup motion is allowed to remain on the loom side on which it is attached. The complete Roper let-off motion is allowed to remain on the loom side on which it is attached. The pick shafts, bearings, balls, and arms are not dismantled.

These parts have to be cut and welded back together:

Back Grit: Eight cutting operations are necessary on this piece.

Front Girt: Eighteen inches are taken from the center section of the front girt, and this 18-inch section is bolted to the remaining ends to hold the two ends together in the loom so they may be welded together.

Arch Connection: Eighteen inches are removed from the center of the arch connection so the sides of the loom can be pulled together and welded.

Breast Beam: Eighteen inches are removed from the center of the breast beam.

Take-Up Roll: Two cuts are made on the take-up roll. The first cut is approximately three inches; this is done to make the roll split easily so that the head of the roll can be removed. The next cut is the remainder of the eighteen inches that is to be removed from the length.

Crank Shaft: Eighteen inches are removed from the center of the crank shaft. It is necessary that the crank shaft be put in a jig to align the off-sets.

Cam Shaft: Eighteen inches are removed from the cam shaft on the end opposite the cam shaft gear.

Whip Roll: Eighteen inches are removed from either end of the whip roll, and eighteen inches are removed from the whip shaft that goes through the whip roll.

Beam Locks: Most of the beam locks were bought for 22-inch looms, although some of them were bought for 40-inch looms and had to be cut down and a three-fourths inch offset removed from the center of the beam lock to make room for the beam to fit in the lock.

Worm Take-Up Shaft: Eighteen inches are removed from either end of the worm take-up shaft.

Auxiliary Shaft: The auxiliary shaft is removed but does not have to be cut.

Stop Motion: Eighteen inches are removed from either end of the tubing and the bars of the electric stop motion. The stop motion mechanism and the wiring are not removed from the loom. Eighteen inches can be removed from the electrodes; however, we think it is advisable to buy new electrodes.

Lay: The old lays on the looms are thrown away. We use new lays instead of cutting the old ones down.

Reed: The reed can be cut off eighteen inches and used on the 22-inch looms.

Harness: The 40-inch harness can be cut down by removing eighteen inches of the wood frame and by removing eighteen inches of the harness ribs.

The looms are then rebuilt. See article for pictures and other details of this changeover. (*Textile Industries 116*, 114-117, December, 1952.)

WILL TEXTILE INDUSTRY FOLLOW COTTON PRODUCTION WEST?

On September 8th the government estimated the American cotton crop at 13,889,000 bales. Of

this amount, 1,793,000 bales will be produced in Virginia, North Carolina, South Carolina, Georgia, Alabama and Florida. The remaining 12,096,000 bales will be produced in the West and far West. The states which, according to government estimate, will produce 1,793,000 bales at one time were the major cotton-producing states. They are also the states which manufacture about eighty per cent of all the cotton manufactured in the United States. The question is now asked many times, "Will the textile industry in the Southeast follow the cotton crop West?" Some sixty years ago the cotton textile industry began its move from New England to the South. Many people think it moved to be near the cotton field and that it may move West for the same reason. I think the proximity to the cotton field was one of the lesser reasons for the textile industry coming to the Southeast and that this will still be a lesser reason if and when it moves again. I believe that all of the following factors had more to do with the textile industry leaving New England than did the desire to be near the cotton patch:

1. High local taxes.

2. Higher labor costs. Cotton mills that moved South paid lower wages than those that remained in New England. These lower wages, though, were much higher than other earnings available to Southern people and were attractive to Southern people for that reason.

3. Restrictive legislation concerning working conditions.

4. Unwillingness of many New England mill owners to reinvest their earnings in the business and thereby keep their mills competitive.

5. Absentee management plus absentee ownership. Someone has said that there is no fertilizer on a farm as good as the owner's footprints. Such footprints also have some value in an industrial establishment.

6. A less favorable climate.

7. A sense of being unwanted and unwelcome in many New England communities and exactly the opposite feeling in most Southeastern communities. This reason, though intangible, is perhaps more important than any of the others.

If and when the textile industry moves again, the same factors I have mentioned will more heavily influence the decision than will a desire to be in the center of the cotton-producing area. (J. Craig Smith. *Textile Industries 116*, 108, December, 1952.)